

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number  
**WO 2005/087660 A1**

(51) International Patent Classification<sup>7</sup>: **C01B 25/32**,  
25/455, C01F 11/18, 11/46

(21) International Application Number:  
PCT/CH2004/000151

(22) International Filing Date: 15 March 2004 (15.03.2004)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: FLAME SYNTHESIS OF METAL SALT NANOPARTICLES, IN PARTICULAR CALCIUM AND PHOSPHATE  
COMPRISING NANOPARTICLES

(57) Abstract: Described is a method for the production of metal salts, wherein the cationic metal is preferably selected from Group I to IV metals and mixtures thereof and the anionic group is selected from phosphates, silicates, sulfates, carbonates, hydroxides, fluorides and mixtures thereof, and wherein said method comprises forming a mixture of at least one metal source that is a metal carboxylate with a mean carbon value per carboxylate group of at least 3 and at least one anion source into droplets and oxidizing said droplets in a high temperature environment, preferably a flame. This method is especially suited for the production of calcium phosphate biomaterials such as hydroxyapatite (HAp, Ca<sub>10</sub>(PO<sub>4</sub>)<sub>6</sub>(OH)<sub>2</sub>) and tricalcium phosphate (TCP, Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>) that exhibit excellent biocompatibility and osteoconductivity and therefore are widely used for reparation of bony or periodontal defects, coating of metallic implants and bone space fillers.



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